Comment No.	Section	Page	Comment
1	General Comment	Various (global comment)	The Draft Feasibility Study (FS) Work Plan prepared by Tierra Solutions, Inc. (Tierra) and dated December 2016 includes multiple references to the risk assessment process and also identifies the preparation of a Probabilistic Risk Assessment (PRA) as part of the Newark Bay Study Area (NBSA) Remedial Investigation (RI). Completion of the deterministic risk assessment is necessary to inform the need for a PRA and should serve as the basis for any decisions regarding whether a PRA needs to be conducted during the RI. Before conducting a PRA, a PRA Work Plan must be submitted to EPA for review and approval. A PRA Task is not included in the Tierra project schedule dated January 2017, and further discussion is required with EPA regarding integration of a PRA deliverable with the NBSA RI/FS process. Reference to the specific types of risk assessments to be conducted should be removed from the FS Work Plan. FS Work Plan text regarding the risk assessments could be addressed via a broad statement, to be added to Section 4.1, that the FS will rely on the findings of the Newark Bay risk assessments to establish Remedial Action Objectives (RAOs) that are protective of human health and the environment, with consideration of detected contaminant levels, exposure pathways, protective risk ranges, preliminary remedial goals, and ARARs. Please revise the text in Section 1.4.2, Section 3.0, Section 4.1, and other sections (as appropriate) to remove reference to the PRA.
2	Section 1.1 "Regulatory Setting"	Pages 1-1 to 1-2	Please also reference the following sediment remediation and FS guidance documents in Section 1.1 and consult them for development of the FS: • *Contaminated Sediment Remediation: Remedy Selection for Contaminated Sediments* [Interstate Technology and Regulatory Council (ITRC), August 2014] • *Climate Change Adaptation Technical Fact Sheet: Contaminated Sediment Remedies* (EPA 542-F-15-009, April 2015) • *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites* (EPA 540-R-09-001, December 2012). • *The Feasibility Study: Detailed Analysis of Remedial Action Alternatives* (EPA OSWER Directive 9355.3-01FS4, March 1990).

3	Section 1.1 "Regulatory Setting"	Page 1-2, last sentence of Section 1.1	Please check the web link in the PDF document; while the URL text displays correctly, the link does not seem to connect to the "Superfund Contaminated Sediments: Guidance Documents, Fact Sheets and Policies" webpage.
4	Section 1.2 "Feasibility Study Process"	Page 1-2	Please add underlined text as follows to modify the second sentence to read "The data collected in the RI, <u>including the findings of the baseline risk assessments,</u> influences the development of remedial alternatives…"
5	Section 1.3 "Document Organization"	Page 1-2, first paragraph	Please revise the text to indicate that the final, agency-approved version of the *Lower Passaic River Restoration Project Feasibility Study Work Plan*, which is currently undergoing revision in response to EPA and partner agency comments, will be considered to guide the NBSA FS.
6	Section 1.4.1 "Unique Challenges of Sediment Sites"	Page 1-3	Section 1.4.1 restates language presented in *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (USEPA 2005). Please combine this section with Section 1.4.3 and add site-specific information to each bullet item currently listed on page 1-3 to discuss how the listed challenges are applicable to Newark Bay and to expand on any challenges that are felt to be uniquely prevalent/significant to the FS.
7	Section 1.4.2 "Sediment Management Principles"	Page 1-3, First paragraph	Section 1.4.2 references OSWER Directive 9285.6-08 and includes language from the Directive. Please expand Section 1.4.2 by including the following information that was also excerpted from the Directive (page 2, "Background", Third Paragraph), "While this directive applies to all contaminants at sediment sites addressed under CERCLA or RCRA, its implementation at particular sites should be tailored to the size and complexity of the site, to the magnitude of the site risk, and to the type of action contemplated."
8	Section 1.4.2 "Sediment Management Principles"	Page 1-4, Principle No. 1	Consistent with OSWER Directive 9285.6-08 (page 2, "Control Sources Early"), please expand the text of Principle No. 1 to state that project managers will "assess which continuing sources can be controlled and by what mechanism." Based on information currently available from the RI data gathering, describe how sources of concern will be identified, assessed, and ranked in regard to their potential impact on FS decision making. Please provide examples of specific, potential sources of concern, based on available data and site background information.

9	Section 1.4.2 "Sediment Management Principles"	Page 1-4, Principle No. 4	Please add a reference to the guidance document "Technical Guidelines on Performing a Sediment Erosion and Deposition Assessment (SEDA) at Superfund Sites," ERDC TR-14-9 (USACE-ERDC, 2014). Please also expand the text to identify available datasets pertinent to assessing sediment stability (*e.g.*, NBSA SEDFlume testing data, Phase I/II sediment core radiodating and estimated deposition rates, pending Phase I/II vs. Phase III surface sediment contaminant concentration comparison) and describe how these datasets may be used to address this principle in both the CSM update and the FS report.
10	Section 1.4.2 "Sediment Management Principles"	Page 1-4, Principle No. 5	Please refer to Comment No. 1. Please revise the risk assessment text to broadly state that human health and ecological risk assessments will be conducted to characterize risks. Please also include reference to potential pilot testing activities and continued testing of hypotheses and re-evaluation of site assumptions as examples of iterative approaches. Please clarify the text to describe that additional iterations of the RI risk assessments are not anticipated during the FS.
11	Section 1.4.2 "Sediment Management Principles"	Page 1-4, Principle No. 6	Consistent with OSWER Directive 9285.6-08 (page 6, "Carefully Evaluate the Assumptions and Uncertainties"), please expand the quote cited in Principle No. 6 to also include the text: "Management decisions must be made, even when information is imperfect. There are uncertainties associated with every decision that need to be weighed, evaluated, and communicated to affected parties. Imperfect knowledge must not become an excuse for not making a decision."
12	Section 1.4.2 "Sediment Management Principles"	Page 1-5, Principle No. 8	The text indicates that the FS will ensure that sediment cleanup levels are tied to the risk management goals. Please also state that RAOs need to meet the first two of the nine FS evaluation criteria (*i.e.*, protect human health and the environment and meet ARARs).

13	Section 1.4.2 "Sediment Management Principles"	Page 1-5, Principle No. 9	a. Consistent with OSWER Directive 9285.6-08 (page 8, "Maximize the Effectiveness of Institutional Controls and Recognize their Limitations"), please expand the FS the text to state that institutional controls have limited effectiveness in preventing ecological exposure. Please generally describe the range of Institutional Controls to be considered in the FS. b. Although some types of Institutional Controls and other "use restrictions" may either already exist, or may be used in the future in the NBSA, please make a distinction among Institutional Controls and intended purposes in the text. For example, existing restrictions are in place to protect against potential exposures to existing, unacceptably elevated chemical concentrations in water, sediment, and biota, which triggered the need for the NBSA RI/FS. Institutional Controls, such as fishing consumption advisories and/or fishing and swimming bans are used either in the absence of a remedial action or to supplement a selected remedial action until such time that the remedial action becomes fully effective (*i.e.*, achieves site-specific remedial goals and project RAOs). An overview goal for this project is to return this waterway to "fishable and swimmable" conditions, to the extent possible, by attaining Federal and State surface water quality criteria and sediment quality/conditions, considered protective of public health and ecological receptors. As such, the emphasis during remedial alternatives development is to limit the need for Institutional Controls and other use restrictions for the natural resource, to the extent possible. Please include a summary of this information in the text.
14	Section 1.4.2 "Sediment Management Principles"	Page 1-5, Principle No. 10	Please clarify why the last sentence states "…value engineering may be incorporated in the FS." Under what circumstances would value engineering not be considered?

15	Section 1.4.2 "Sediment Management Principles"	Page 1-5, Principle No. 11	a. In the first sentence, please change the phrase "and/or" to simply "and", as it is anticipated that biological monitoring will be part of remedy effectiveness monitoring. b. Please revise end of first sentence to read "…and to evaluate if the RAOs and site-specific remediation goals are being met," since monitoring is to be performed to determine if both RAO (broad objectives) and site-specific remediation goals for sediment, water, and biota are met.
16	Section 1.4.3 "Site-Specific Feasibility Study Consideration"	Page 1-6, First paragraph	a. Please clarify the sentence "Estimated and projected conditions have uncertainties..." The meaning of "estimated and projected conditions" is not clear. How will uncertainties be evaluated and to what does "appropriate use" refer? b. The text states that "The NBSA is a complex and dynamic estuary that cannot be understood by simply evaluating the data collected within the NBSA …" Please identify which data from outside the NBSA are needed to complete the FS. c. Please also clarify the meaning of the phrase "unique challenges of the NBSA affecting the estuary". d. Revise the text to replace negative statements with a description of a likely problem-solving approach. For example, replace the statement "The NBSA…cannot be understood by simply evaluating the data…" with a statement such as "An evaluation of data collected for the RI combined with the use of appropriate site-specific models, consideration of changes in the geomorphology and human use of the NBSA over time, and geochemical evaluation of interactions between the NBSA and its tributaries will be used to characterize the estuary to a level that is appropriate for FS decision making."
17	Section 1.4.3 "Site-Specific Feasibility Study Consideration"	Page 1-6, Second paragraph and first bullet	Please state how discharges of potential concern from CSOs, SWOs, wastewater treatment plants, and marine/industrial spills and releases will be identified and characterized to calculate and appropriately weight contaminant loadings to Newark Bay (contaminant mass balance).

18	Section 1.4.3 "Site-Specific Feasibility Study Consideration"	Page 1-6, Second bullet	Please clarify how "anthropogenic forces" from CSO and SWO discharge points could impact the operation and maintenance of a remedy. Is this intended to be distinct from the first bullet (contaminant sources)? Discuss how the hydrodynamic and sediment transport model and other supporting models can be implemented to assess impacts of storms, tides, wave-driven resuspension, and navigation on the NBSA sediment bed.
19	Section 1.4.3 "Site-Specific Feasibility Study Consideration"	Page 1-6, Third bullet	The observation that contaminated sediment remediation poses unique challenges in comparison to upland site remediation is redundant here and can be removed from the text.
20	Section 1.4.3 "Site-Specific Feasibility Study Consideration"	Page 1-6, Bullet List	Please add the following new bullet: "The presence of contaminant patterns, as revealed through the RI sediment chemical characterization programs. Some regions and geomorphic areas of the bay are more heavily impacted by certain contaminants than other regions and geomorphic areas, based on proximity to sources."
21	Section 1.4.3 "Site-Specific Feasibility Study Consideration"	Page 1-6, Bullet List	Please add the following new bullet: "Key factors (and potential constraints) for certain remedial actions, including shoreline conditions (*e.g.*, integrity of riprap or bulkheads), bridges, port facilities, and commercial shipping traffic, will require consideration and evaluation." Please state whether these topics are to be evaluated during the FS or as part of pre-design investigations.
22	Section 2 "Study Area Setting"	Page 2-1, First paragraph	Please revise the text that follows "…CSM (Tierra 2013), which is an evolving document that will be updated in the near future …" to read "… CSM (Tierra 2013), which is an evolving document that will be updated in spring 2017…" to be consistent with page 1-4. Please also clarify that the CSM update is a RI task and not a FS task.
23	Section 2.2 "History & Physical Setting"	Page 2-1, General comment	To complete Section 2.2 "History and Physical Setting," please add a paragraph on the Diamond Alkali Superfund Site, discuss its connection to Newark Bay (Operable Unit 4), add a reference to the RI effort, and include a reference to Figure 1-1.
24	Section 2.2 "History & Physical Setting"	Page 2-1, First paragraph	Please add CSM figures to the FS Work Plan or remove the sentence "Summary figures from the CSM are included for reference."

25	Section 3.0 "Identification of Data Uses and Needs"	Page 3-1, General comment	Please clarify that once the risk assessment has been completed, the FS text will identify the COPCs that exceed the risk range and the goal of protection of a HI = 1 for specific health effects.
26	Section 3.0 "Identification of Data Uses and Needs"	Pages 3-1 to 3-2	a. Page 3-1 states "The SOW includes the completion of the BHHRA, BERA, and PRA." As stated, this is not a FS data need. Please revise to generically identify unacceptable human and ecological health risks, exposure pathways, and preliminary remediation goals (PRGs) as risk assessment output needed for the FS. Also, a Probabilistic Risk Assessment is not described in the AOC. Please correct the sentence. b. Page 3-1 states that "The results from the Phase III Sediment Investigation will be used…to *update* the risk assessments and RI of the NBSA" (italics added). The word choice suggests that there will be an iterative process of risk assessment that is not desirable – the development of supplemental risk assessments may be confusing and multiple updates to RAGS Part D tables will be time-consuming to review and would impact the project schedule. Please clarify or revise the wording from "update" to "complete"; see also Comment No. 1. c. Page 3-2, first to last bullet (PRA). How will the most sensitive receptors be identified and what additional data will be required to "decrease uncertainty" regarding their calculated exposures and associated risk? As discussed in Comment No. 1, please remove reference to the PRA.
27	Section 4.0 "Technical Approach" and Figure 4-1	Page 4-1 and Figure 4-1	a. While the FS Technical Approach and Figure 4-1 "Flow Chart" present a textbook timeline of when tasks will occur, please consider what tasks can occur in parallel (versus sequentially). For example, on the Berry's Creek Study Area project, the Treatability Study & Pilot Study task was conducted in parallel with the Remedial Investigation to provide more upfront information for the Initial Screening of Alternatives. Please add language to the FS Work Plan that Tierra will consider (where appropriate) conducting tasks in parallel to enhance the overall FS program. b. Please add an inset to Figure 4-1 with acronym definitions.

28	Section 4.1 "Task 1"	Page 4-1, General comment	a. Please note that 'To Be Considered' criteria (TBCs) will be examined along with ARARs. b. Please clarify that PRGs are to be developed during the risk assessment and that essentially a transfer of information from the risk assessments is envisioned here, otherwise please clarify what type of PRG development will occur as part of Task 1. c. The text states that "PRGs will also consider any ARARs." Please revise sentence to read "PRGs will be protective of human health and the environment, and they will meet ARARs."
29	Section 4.2 "Task 2"	Page 4-2, Second bullet on top of page	When discussing potential exposure pathways, please add a reference to the human health and ecological risk assessments, where the pathways of exposure will be identified.
30	Section 4.3 "Task 3"	Page 4-2, "Work Effort"	a. Please include Institutional Controls, Sediment Removal, and Containment with In-situ Treatment (*e.g.*, an amended cap) as possible alternatives to be examined for NBSA. b. Please clarify the criteria that will be used to determine which technologies have a significant potential for being implemented in Newark Bay (versus being ruled out). Further, the text needs to indicate the basis for selecting "promising innovative technologies".
31	Section 4.4 "Task 4"	Page 4-3, Bullet on Effectiveness, Implementability, and Costs	a. The text describing Effectiveness, Implementability, and Costs is taken from the USEPA 1988 RI/FS guidance document. It is recommended that this section be revised to more closely follow "The Feasibility Study: Detailed Analysis of Remedial Action Alternatives" (USEPA 1990) and "Contaminated Sediment Remediation Guidance for Hazardous Waste Sites" (USEPA 2005). b. The bullet for Effectiveness should be re-written to include the words "This evaluation will focus on the potential effectiveness of the alternatives in meeting ARARs, RAOs, and site-specific remediation goals as established through the project risk assessments." As currently written, the text primarily addresses potential impacts during construction (short-term effectiveness).

32	Section 4.5 "Task 5"	Page 4-4, First paragraph	Please describe some of the criteria that would be used to determine the need for a Treatability Study, Bench-scale Study, and/or Pilot Study.
33	Section 4.5 "Task 5"	Page 4-5, Second bullet under Treatability Testing Work Plan	a. Please revise second sub-bullet to read: "Remedial technology(ies) to be tested and the rationale for their selection." b. For the ninth sub-bullet, please clarify whether the Health and Safety Procedures cited are for the workers or the community (or both).
34	Section 4.6 "Task 6"	Page 4-6, "Subtask 1" and page 4-7, Third bullet "Modifying Criteria"	a. The detailed analysis of alternatives will evaluate the first seven of the nine criteria. The last two criteria ("state acceptance" and "community acceptance") are evaluated after the Proposed Plan phase. Please add information to this effect to Task 6. b. Based on USEPA 1988 guidance, "Modifying Criteria" (State Acceptance and Community Acceptance) are to be addressed in the ROD based on comments on the RI/FS and Proposed Plan. Please correct the text.
35	Section 4.7 "Task 7"	Page 4-8	Please add a task for Final Feasibility Study Report (or add the final version to Task 7).
36	Figure 1-1	NA	Please clearly label the Diamond Alkali Superfund Site OU-1 at 80-120 Lister Avenue.
37	Figure 2-1	NA	a. Please add the Newark Bay Confined Disposal Facility (CDF) and Conrail Bridge to the timeline, so that all features displayed on Figure 2-2 are presented on the timeline. b. Please explain the difference between the 2011 Tropical Storm Lee and the "2011 Local Storm" presented on the timeline. c. Please clarify how instances of a Passaic major flood event can occur without an associated storm. (For example, major floods were recorded in 1987 and 1989, but there is no local storm, tropical storm, or hurricane on record.) Please investigate the primary source where floods were recorded to see if a local storm occurred within the time of the recorded flood event.

38	Figure 2-2	NA	a. Please provide information (if possible) on what tidal condition the three shorelines represent. b. Please provide the reference for the 1845 and 1940 shorelines. c. Please clarify if the symbol for "Historical Structure" (dotted orange line) represents above-ground or underground structures. d. Please add an arrow pointing to the position of the "Howland Hook Marine Terminal."